Amendments to the Claims

1. (Previously Presented) An apparatus for electrorheological printing, the apparatus comprising:

a pressurized ink chamber in fluid communication with a nozzle and configured to contain an electrorheological ink, wherein the nozzle includes electrodes for controlling a discharge of the electrorheological ink;

an electrode arrangement configured to create an electric field within the nozzle using a first circular electrode at an inlet to the nozzle and a second circular electrode at an outlet of the nozzle to control a rate of discharge of the electrorheological ink through the nozzle, wherein the electrode arrangement is further configured to create a first magnitude electric field within the nozzle sufficient to stop the discharge of the electrorheological ink through the nozzle and configured to create, within the nozzle, a second magnitude electric field lower than the first magnitude electric field to permit electrorheological ink to discharge through the nozzle;

a stimulator configured to generate a synchronization signal to increase the pressure in the pressurized ink chamber to:

allow the discharge of the electrorheological ink through the nozzle when the electric field created within the nozzle is less than or equal to the second magnitude electric field; and

prevent the discharge of the electrorheological ink through the nozzle when the electric field created within the nozzle is greater than or equal to the first magnitude electric field; and

a pair of conductive plates aligned in parallel with a path of the electrorheological ink from the outlet of the nozzle to modify the path of the electrorheological ink from the outlet of the nozzle.

2 (Cancelled)

3. (Currently Amended) The apparatus of claim 1, wherein the first circular ~~ring~~ electrode is connected to a first electrical lead and the second circular ~~ring~~ electrode is connected to a second electrical lead.

4. (Original) The apparatus of claim 3, wherein the first electrical lead is connected to a reference voltage and the second electrical lead is connected to a power supply, the power supply configured to supply a voltage that is different from the reference voltage.

5-7. (Cancelled)

8. (Previously Presented) The apparatus of claim 1, wherein the nozzle is a first nozzle of a plurality of nozzles forming a nozzle array and the electrode arrangement is one of a plurality of electrode arrangements, each electrode arrangement disposed to control a rate of discharge of a flow of the electrorheological ink through one of the plurality of nozzles.

9. (Previously Presented) The apparatus of claim 8, wherein a flow of the electrorheological ink through each nozzle of the nozzle array is independently controlled.

10. (Original) The apparatus of claim 1, further comprising a print control module configured to control electrorheological printing, the print control module comprising:

a print control module configured to receive a print signal;

a synchronization signal module configured to control the synchronization signal generated by the stimulator; and

an electrode control module configured to synchronize a voltage level at the electrode arrangement with the synchronization signal and the print signal.

11. (Original) The apparatus of claim 10, wherein the electrode control module is further configured to de-energize the electrode arrangement about when the synchronization signal and the print signal are enabled.

12. (Original) The apparatus of claim 10, further comprising a pump control module configured to control a pump to control the pressure in the pressurized ink chamber.

13. (Previously Presented) The apparatus of claim 10, further comprising a viscosity control module configured to control a viscosity of the electrorheological ink as the electrorheological ink discharges from the nozzle.

14. (Original) The apparatus of claim 10, further comprising a media compensation module configured to modify the voltage level at the electrode arrangement to compensate for a variation in a speed of a print media on which the electrorheological ink is being printed.

15-16. (Cancelled)

17. (Previously Presented) A computer readable storage medium comprising computer readable code configured to carry out a method for electrorheological printing, the method comprising:

pressurizing an electrorheological ink in an ink chamber, wherein the ink chamber is in fluid communication with a nozzle and the nozzle includes electrodes for controlling a discharge of the electrorheological ink;

creating an electric field within the nozzle using a first circular electrode at an inlet to the nozzle and a second circular electrode at an outlet of the nozzle to control a rate of discharge of the electrorheological ink through the nozzle, wherein the electrode arrangement is further configured to create a first magnitude electric field sufficient to stop the discharge of the electrorheological ink through the nozzle and configured to create, within the nozzle, a second magnitude electric field lower than the first magnitude electric field to permit electrorheological ink to discharge through the nozzle;

generating a synchronization signal to increase the pressure in the pressurized ink chamber to:

allow the discharge of the electrorheological ink through the nozzle when the electric field created within the nozzle is less than or equal to the second magnitude electric field; and

prevent the discharge of the electrorheological ink through the nozzle when the electric field created within the nozzle is greater than or equal to the first magnitude electric field; and

generating an electric charge on a pair of conductive plates aligned in parallel with a path of the electrorheological ink from the outlet of the nozzle to modify the path of the electrorheological ink from the outlet of the nozzle.

18. (Previously Presented) The computer readable storage medium of claim 17, wherein creating an electric field comprises creating a voltage difference between a first electrode and a second electrode.

19. (Cancelled)

20. (Previously Presented) The computer readable storage medium of claim 17, wherein controlling the rate of discharge of the electrorheological ink through the nozzle comprises changing a viscosity of the electrorheological ink.

21. (Cancelled)

22. (Cancelled)

23. (Original) The computer readable storage medium of claim 17, wherein the method further comprises discharging a drop of the electrorheological ink from the nozzle.

24. (Currently Amended) The computer readable storage medium of claim 17, wherein the method further comprises de-energizing the electrode arrangement about when the synchronization signal and a ~~the~~ print signal are enabled.

25. (Original) The computer readable storage medium of claim 17, wherein the method further comprises receiving a print signal.

26. (Original) The computer readable storage medium of claim 17, wherein the method further comprises controlling a pump to control the pressure in the pressurized ink chamber.

27. (Previously Presented) The computer readable storage medium of claim 17, wherein the method further comprises controlling a viscosity of the electrorheological ink as the electrorheological ink discharges from the nozzle.

28. (Currently Amended) The computer readable storage medium of claim 17, wherein the method further comprises modifying the second magnitude electric field to compensate for a variation in a speed of a print media on which the electrorheological ink is being printed.

29. (Previously Presented) A method for electrorheological printing, the method comprising:

pressurizing an electrorheological ink in an ink chamber, wherein the ink chamber is in fluid communication with a nozzle and the nozzle includes electrodes for controlling a discharge of the electrorheological ink;

creating an electric field within the nozzle using a first circular electrode at an inlet to the nozzle and a second circular electrode at an outlet of the nozzle to control a rate of discharge of the electrorheological ink through the nozzle, wherein the electrode arrangement is further configured to create a first magnitude ~~an~~ electric field sufficient to stop the discharge of the electrorheological ink through the nozzle and configured to create, within the nozzle, a second magnitude electric field lower than the first magnitude electric field to permit electrorheological ink to discharge through the nozzle;

generating a synchronization signal to increase the pressure in the pressurized ink chamber to:

allow the discharge of the electrorheological ink through the nozzle when the electric field created within the nozzle is less than or equal to the second magnitude electric field; and

prevent the discharge of the electrorheological ink through the nozzle when the electric field created within the nozzle is greater than or equal to the first magnitude electric field; and

generating an electric charge on a pair of conductive plates aligned in parallel with a path of the electrorheological ink from the outlet of the nozzle to modify the path of the electrorheological ink from the outlet of the nozzle.